CLAIMS:

1. A method of demodulating a received phase and/or amplitude modulated signal comprising:

deriving from said received signal a first sequence of samples representative of the phase of the received signal;

deriving from said received signal a second sequence of samples representative of the received signal envelope; and

combining respective ones of said first sequence of samples and said second sequence of samples to output a demodulated representation of said received signal.

2. A method according to Claim 1 wherein said step of deriving said second sequence of samples comprises

deriving from said received signal a continuous-time signal representative of the instantaneous amplitude or power of the received signal;

digitising said continuous-time signal and storing the digital samples generated thereby;

determining a reference value of the stored samples over a predetermined time duration; and

normalising said stored digital samples utilizing said reference value to output said second sequence of samples.

3. A method according to Claim 2 wherein said reference value is the peak amplitude or power value in said predetermined time duration.

4. A method according to Claim 1, 2 or 3 wherein said step of deriving said first sequence of samples comprises

hard-limit amplifying said received signal and performing phase

detection on the amplified signal to generate a continuous-time signal representative of the absolute phase of the received signal: and

digitising said continuous-time signal to output said first sequence of samples, whereby said first sequence of samples is a sequence of samples of the absolute phase of the received signal.

5. A method according to Claim 1, 2 or 3 wherein said step of deriving said first sequence of samples comprises

hard-limit amplifying said received signal and performing phase detection on the amplified signal to generate a continuous-time signal representative of the absolute phase of the received signal; and

digitising said continuous-time signal to output a sequence of absolute phase samples; and

performing differential phase detection on said sequence of absolute phase samples to output said first sequence of samples, whereby the samples in said first sequence characterise the phase shift between pairs of samples a predetermined number of digitising sample periods apart.

6. A method according to Claim 4 or 5 further comprising storing said first sequence of samples and providing each of said first sequence of samples for said combining step at times synchronised with said second sequence of samples.

7. A method according to any preceding claims, said received signal being a TDMA signal.

8. Apparatus arranged to receive and demodulate a phase and/or amplitude modulated signal comprising:

means arranged to derive from said received signal a first sequence of samples representative of the phase of the received signal;

means arranged to derive from said received signal a second sequence of samples representative of the received signal envelope; and

means arranged to combine respective ones of said first sequence of samples and said second sequence of samples and to output a demodulated representation of said received signal.

9. Apparatus according to Claim 8 in which said means arranged to derive said second sequence of samples comprises

means arranged to derive from said received signal a continuous-time signal representative of the instantaneous amplitude or power of said received signal;

digitising means arranged to digitise said continuous-time signal;

storing means arranged to store the digital samples from said digitising means;

determining means arranged to determine a reference value of the stored samples over a predetermined time duration; and normalising means arranged to normalised said samples stored in said storing means utilizing said reference value to output said second sequence of samples.

10. Apparatus according to Claim 9 in which said determining means determines said reference value to be the peak amplitude or power value in said predetermined time duration.

11. Apparatus according to Claim 8, 9 or 10 in which said means arranged to derive said first sequence of samples comprises;

hard-limit amplifying and phase detection means arranged to generate a continuous-time signal representative of the absolute phase of the received signal; and

digitising means arranged to digitise said continuous-time signal to

output said first sequence of samples, whereby said first sequence of samples is a sequence of samples of the absolute phase of the received signal.

12. Apparatus according to Claim 8, 9 or 10 in which said means arranged to derive said first sequence of samples comprises;

hard-limit amplifying and phase detection means arranged to generate a continuous-time signal representative of the absolute phase of the received signal;

digitising means arranged to digitise said continuous-time signal to output a sequence of absolute phase samples: and

differential phase detection means arranged to perform differential phase detection on said sequence of absolute phase samples to output said first sequence of samples, whereby the samples in said first sequence characterise the phase shift between pairs of samples a predetermined number of digitising sample periods apart.

13. Apparatus according to Claim 11 or 12 further comprising storing means arranged to store said first sequence of samples and to output each of said first sequence of samples at times synchronised with said second sequence of samples.

14. Apparatus according to Claim 11, 12 or 13 in which said hard-limit amplifying and phase detection means comprises one or more cascaded amplifiers and analogue filters arranged to output said continuous-time signal at a real intermediate frequency.

15. Apparatus according to Claim 11, 12 or 13 in which said hard-limit amplifying and phase detection means comprises one or more cascaded amplifiers, a quadrature down-mixing circuit and analogue filters arranged to output said

continuous-time signal as a complex baseband signal having two components.

16. Apparatus according to Claim 15 wherein said two components are orthogonal.

17. Apparatus according to any of Claims 8 to 16 arranged to receive and demodulate a TDMA signal.